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PALEOGEOGRAPHIC MAPS OF NORTH AMERICA¹

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7. PENNSYLVANIAN NORTH AMERICA

The passage from Mississippian to Pennsylvanian was characterized by that emergence of lands, which is indicated on the map by the districts assigned to continental deposits and temporary lands. In the eastern United States the tendency toward emergence was progressive though interrupted. In the central west the emergence was but temporary and the transient land area was submerged under the Pennsylvanian sea. In contrast with the Mississippian, the Pennsylvanian continent probably extended far to the west—north of the fortieth parallel. As is shown by White there was land connection with England and Europe, probably around the North Atlantic.

The southeastern portion of the continent appears to have been embraced by branches of the equatorial Atlantic current. The northwestern part was washed by currents from the Arctic and north Pacific. The period was one during which climatic differences developed, and the situation of North America favored that development. The accumulation of coal in the southeastern portion in contrast to red sediments in the southwestern part may thus be explained as an effect of climate, in the one district favorable, in the other unfavorable to vegetation. Red beds are to some extent interbedded with coal measures, as glacial deposits of the Pleistocene are with interglacial, and it is probable that the relations may be interpreted as evidence of climatic fluctuations.²

¹ Published by permission of the Director of the U. S. Geological Survey.

² *Acknowledgments.*—The maps of Mississippian and Pennsylvanian North America were prepared in conference with Dr. G. H. Girty. As should have been stated in the appropriate connection, the maps of Devonian and Silurian geographies have been improved by data furnished by Dr. E. M. Kindle. The three earlier maps, particularly those of Cambrian conditions, are based on the work of Dr. C. D. Walcott, and have been adjusted to the results of his investigations. I am indebted to each of these scientists and also to many other fellow-geologists, members of the U. S. Survey and others, for suggestions courteously made. They are not responsible, however, for the drafts of the maps.—BAILEY WILLIS.

